



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,454	04/22/2004	Toshiaki Okuno	50395-270	6426

20277 7590 05/02/2006

MCDERMOTT WILL & EMERY LLP  
600 13TH STREET, N.W.  
WASHINGTON, DC 20005-3096

EXAMINER

PETKOVSEK, DANIEL J

ART UNIT	PAPER NUMBER
----------	--------------

2874

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/829,454

Applicant(s)

OKUNO, TOSHIAKI

Examiner

Daniel J. Petkovsek

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on election filed March 23, 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on April 22, 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/10/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This office action is in response to the election filed March 23, 2006. Claims 1-18 are pending.

#### ***Election/Restrictions***

1. Applicant's election without traverse of Group IV (claims 15-18) in the reply filed on March 23, 2006 is acknowledged.
2. Claims 1-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected Groups, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on March 23, 2006.

#### ***Priority***

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Information Disclosure Statement***

4. The prior art documents submitted by Applicant in the Information Disclosure Statements filed on August 10, 2004, have been considered and made of record (note attached copy of forms PTO-1449).

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2874

6. Claims 15, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Terahara et al. U.S.P. No. 6,721,481 B2.

Terahara et al. U.S.P. No. 6,721,481 B2 teaches (Fig. 4A, Table 2) an optical transmission system comprising a transmitter 104-A for outputting signal light and an optical transmission line for transmitting the signal light outputted from the transmitter 104-A, said optical transmission line comprising a first optical fiber section in an upstream part of the line and a second optical fiber section connected/joined thereto, said first optical fiber section having a negative chromatic dispersion value and an absolute value of the dispersion slope in the range to be smaller than 0.03 ps/nm<sup>2</sup>/km at any one wavelength of signal light (see Table 2 (columns 17-18), and the absolute value of the sum of overall dispersion of the first optical fiber section and overall dispersion of the second optical fiber section is smaller than the absolute value of the overall dispersion of the first optical fiber, which clearly, fully meets Applicant's *claimed* limitations.

Regarding claim 17, the effective core area can be in the 15-45  $\mu\text{m}^2$  range, while the sum can be positive.

Regarding claim 18, pump light can be inputting into the system for Raman type amplification.

7. Claims 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka et al. U.S.P. No. 6,535,677 B1.

Tanaka et al. U.S.P. No. 6,535,677 B1 teaches (Figs. 1, 2, 19 (chart)) an optical transmission system comprising a transmitter 10a for outputting signal light and an optical transmission line 10 for transmitting the signal light outputted from the transmitter

Art Unit: 2874

10a, said optical transmission line 10 comprising a first optical fiber section in an upstream part of the line and a second optical fiber section connected/joined thereto, said first optical fiber section having a negative chromatic dispersion value and an absolute value of the dispersion slope in the range to be smaller than 0.03 ps/nm<sup>2</sup>/km at any one wavelength of signal light (see chart at Fig. 19), and the absolute value of the sum of overall dispersion of the first optical fiber section and overall dispersion of the second optical fiber section is smaller than the absolute value of the overall dispersion of the first optical fiber, which clearly, fully meets Applicant's *claimed* limitations.

Regarding claim 16, there are alternating negative and positive sections of fiber.

Regarding claim 17, Tanaka et al. '677 discusses core areas in the 40 um<sup>2</sup> ranges, while the sum of adjacent fibers can be positive.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. U.S.P. No. 6,535,677 B1.

Tanaka et al. U.S.P. No. 6,535,677 B1 teaches (Figs. 1, 2, 19 (chart)) an optical transmission system comprising a transmitter 10a for outputting signal light and an optical transmission line 10 for transmitting the signal light outputted from the transmitter 10a, said optical transmission line 10 comprising a first optical fiber section in an upstream part of the line and a second optical fiber section connected/joined thereto, said

Art Unit: 2874

first optical fiber section having a negative chromatic dispersion value and an absolute value of the dispersion slope in the range to be smaller than  $0.03 \text{ ps/nm}^2/\text{km}$  at any one wavelength of signal light (see chart at Fig. 19); and the absolute value of the sum of overall dispersion of the first optical fiber section and overall dispersion of the second optical fiber section is smaller than the absolute value of the overall dispersion of the first optical fiber. Tanaka et al. '677 does not explicitly teach that the light source outputs a pumping light for Raman amplification.

However, the Tanaka et al. '677 reference teaches optical amplification of the optical fiber system. A person having ordinary skill in the art at the time the invention was made would have recognized using a source such as a pumping light in order to amplify the input signal for the purpose of improving the measurability and quality of the optical system throughout the device. One having ordinary skill would have recognized that using pump signals in such a device would lead to improved quality and performance (and decreased errors) during operation.

### *Inventorship*

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2874

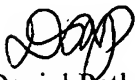
*Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of optical transmission systems using alternating positive and negative dispersion fibers: PTO-892 form references B, D, and E.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Petkovsek whose telephone number is (571) 272-2355. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Daniel Petkovsek  
April 30, 2006

  
AKM ENAYET ULLAH  
PRIMARY EXAMINER